REMARKS/ARGUMENTS

The undersigned thanks the examiner for confirming, in sections 1, 2 and 3 of the Office Action, that the certified copy is of record, the terminal disclaimer is acceptable and the arguments submitted September 14, 2006 were persuasive, and for advising that the rejection based upon Elliott has been withdrawn.

Regarding the objections to claims 3 and 15 in section 4 of the Office Action, the examiner is quite correct; accordingly "target dose" has been changed to "measured dose". In addition, this opportunity has been taken to amend the dependency of claim 15 for consistency with claim 3.

Regarding the objection to claim 14, the typographical error has been corrected.

In section 8 of the Office Action, claims 1, 3, 6-13 and 18-26 were rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa (US 6,398,710). The rejection is respectfully traversed on the grounds that the examiner has not established *prima facie* obviousness. With respect, the examiner has misinterpreted Ishikawa's disclosure, reading more into it than is actually there, misinterpreted applicant's claims, and based assertions as to what the skilled addressee would find obvious upon hindsight culled from reading applicant's specification rather than upon what is actually taught by the cited reference or some other substantive source. [Crown Operations Int'l, Ltd. v. Solutia, Inc., 289 F.3d 1367, 1376 (Fed. Cir. 2002)].

The present applicant does not dispute that prior art techniques are known which enable the physician to determine what radiation dose was received at a particular position of a patient's body. The problem addressed by the invention is that the information was not presented in a manner that made it easier for the physician to absorb. Thus, as explained in the passage from page 1, line 33 to page 2, line 5 of applicant's specification, known patient dose verification systems presented dose data (a) on a display on the reading instrument, (b) on a print-out from the electronic reader or (c) on a computer screen. In each case, the information was presented in the form of numerical tables and, in some cases, such as the computer screen case, using graphs. Earlier systems by the owner of the present invention used Excel™ spreadsheets.

The present invention, as set out in applicant's claim 1, addresses the problem by a method of producing a radiation dosimetry report which includes the steps of

(i) providing a representation comprising an image of at least a portion of the body or body part that has been irradiated and *arranging a plurality of graphics artefacts* on or adjacent the representation, *each artefact comprising an identifier* and *representing a radiation sensor* positioned in, on or adjacent the body or part thereof during irradiation, the position of each artefact relative to the representation corresponding to the position of a corresponding sensor relative to the body during irradiation; and

(ii) *listing radiation doses associated with the plurality of identifiers*, respectively.

Thus, the dosimeter report contains (i) an image the body part which has been irradiated; (ii) a plurality of artefacts; and (iii) a list of radiation doses.

Each artefact conveys two items of information, namely the position of the sensor relative to the body part and the identity of the corresponding sensor. The position information is conveyed by the position of the artefact on the representation. The identity information is conveyed by means of an identifier unique to that sensor.

In the list of radiation doses, each radiation dose reading is associated with a respective one of the identifiers.

In order to determine the part of the body exposed to a particular dose reading, the physician determines the unique identifier in the list, and uses it to identify the corresponding artefact sensor in the representation, and sees immediately the position of the artefact and, hence, the part of the body which received that radiation dose.

In preferred implementations covered by dependent claims, the list contains both target doses and measured doses side-by-side, enabling the physician to determine quickly and easily what dose was intended and what dose was actually received.

Thus, the dosimeter report provided according to the present invention provides both a listing of doses and an "array" of artefacts disposed about a representation of the body part, with the unique identifiers linking them together. This conveys the dose data to the physician very efficiently.

Ishikawa does not disclose or suggest such a method. In fact, contrary to the examiner's assertions, Ishikawa does not actually disclose what the physician sees as a dosimeter report. The passage from lines 23-31 states that "the CPU 114 polls each of the transponders 236 and 238 by addressing them according to their respective stored unique ID codes". Hence, the "unique identifiers" are stored in the transponders and, presumably, in the memory CPU so that the CPU can use them to poll the transponders.

The passage goes on to say that each of the transponder signals received by the CPU 114 and the RF receivers 126 and 128 "allows its location to be identified and superimposed on a fluoroscopic map of the tumor 234 on the display 118." The remainder of the paragraph goes on to describe a beam alignment procedure which involves applying an initial registration burst of radiation to determine if the radiation beam is in the target area 112 and if the dosage received by the tumor is appropriate. At lines 45-51 Ishikawa explains that "This information can be displayed by the CPU 114 on the display 118 to confirm that the dosage level is within a preset range determined to be appropriate for the particular procedure". It should be noted, however, that Ishikawa does not say how this information is displayed.

The examiner's statement "Although the representation in figure 2 *of each artefact* which corresponds to the position of a corresponding sensor relative to the body part does not display the identifier,...." (emphasis added) is simply incorrect and not supported by Ishikawa's description. Ishikawa's Figure 2 does not show artefacts displayed upon the computer display 118; it is, in fact, "a diagram of a tumor 234 with a slurry of internal dosimetry transponders 236 implanted therein" (Col. 3, lines 49-51; Col. 5, lines 52-54). Hence, Figure 2 shows the physical transponders - not artefacts representing them.

With respect, the examiner's statement that "since each sensor already has a unique identifier, it would be obvious to one skilled in the art ... to mark or somehow display the identifier to identify each artefact" is pure conjecture, given that Ishikawa does not say what is displayed. Also, the statement "the physician would have to know which radiation sensor is reading what dosage or else the listing of the dosage readings would not be helpful..." is unhelpful since any of the known techniques discussed by the present applicant would allow the physician to know which radiation sensor is reading what dosage. The point is, Ishikawa neither describes nor suggests providing the information in the manner specified in applicant's claim 1.

It follows that the rejection of claim 1 as unpatentable over Ishikawa is untenable and should be withdrawn. Similar arguments apply to claims 13 and 25 directed to the dosimeter reports themselves. Each of the other claims of record is dependent directly or indirectly upon one or other of claims 1, 13 and 25 and so the rejection of the dependent claims is untenable for the same reasons and should be withdrawn.

Notwithstanding the foregoing, it is noted that the examiner's statements in sections 10, 11 and 12 are unsupported by the references. The "art" to which the present invention relates is the

dosimeter report field and the present invention is for a particular way of reporting the information in dosimeter reports that is neither disclosed nor suggested by the prior art of record.

It is also noted for the record that Ishikawa discloses wireless communication between the CPU and antenna and the transponders, whose positions are determined using a form of radio location. Thus, the locations of the transponders are detected by the CPU, and not input by the operator. In preferred embodiments of the present invention, however, the locations of the dosimeters in the report are input manually by the operator, based on his/her placement of dosimeters on the patient skin, body, etc.

With respect to section 12 of the Office Action, Elliot *et al.* disclose a technique intended for use in equipment-preparation and treatment delivery, while Ishikawa focuses upon the radiation measurement. In practice, treatment delivery and radiation dose measurement are two separate fields. A person who operates the device of the mind disclosed by Ishikawa will not likely be motivated by a feature of a machine used for purposes other than treatment dosimetry.

Moreover, arguments that the disclosure by Elliott *et al.* was not relevant because the present invention is a reporting method, totally different from a treatment delivery method, were presented previously. In the response to the previous Office Action, it was stated that "A person seeking a solution to the problems associated with confirming that the 'dose levels were taken at the proper locations on the body of the patient' would not be motivated to look to such a radioisotope seed loading system for guidance. (*In re* Deminski, 796 F.2d 436, 442 (Fed. Cir. 1986); *In re* Wood, 599 F.2d 1032, 1036 (CCPA 1979). According to the examiner's statement in section 1 of the present Office Action, the arguments presented previously were found to be persuasive.

It is also noted that preferred embodiments of the present invention relate to real-time measurement and display of actual dose (i.e., measured during therapy) against target dose (input by the user) with deviation estimated, as disclosed and claimed in the parent patent. This is neither disclosed nor suggested by Elliot *et al.* and Ishikawa, whether taken individually or in combination.

Still with reference to section 12, Ishikawa's disclosure would not lead a person skilled in this art to the simple and direct reporting of target dose as compared with measured dose according to preferred embodiments of the present invention. Ishikawa's methodology entails multiple steps such as transponder insertion into a tumor, transponder localisation, X-ray imaging, comparison of location and superposition to an X-ray image, or treatment plan calculation of dose at this location as target dose. This is more complicated than embodiments of the present invention where target

dose at the body surface or at Dmax, where the dosimeter sensor is attached, is known for every treatment. (In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993); In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); In re Bell, 991 F.2d 781, 782, 26 USPQ2d).

The response to the previous office action provides further arguments in support of the patentability of dependent claims over Elliott *et al.*

US Published application No. 2005/0090738 by Black, cited by the examiner as pertinent, but not applied, has been reviewed but is not considered to be so pertinent as to affect patentability of the present invention. It is noted that Black's application claims priority, through its parent, from a Provisional patent application filed November 30, 2001, whereas the present application claims priority, through its parent, from a Canadian patent application filed October 20, 2000.

In view of the foregoing, it is submitted that all claims of record are patentable over the cited references and the applicant respectfully requests withdrawal of the rejection of claims 1 - 26 and early and favourable reconsideration and allowance of the application.

With a view to expediting allowance, the examiner is invited to call the undersigned at (613) 254 9111 if she has any further concerns.

Respectfully submitted,

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